CT-PPS Quartic Geant4 simulation tool

Generated by Doxygen 1.8.8

Mon Feb 9 2015 12:03:01

Contents

1	Hiera	archical Index	1
	1.1	Class Hierarchy	1
2	Clas	s Index	3
	2.1	Class List	3
3	Clas	s Documentation	5
	3.1	DetectorSD Class Reference	5
	3.2	QuartLActionInitialization Class Reference	5
	3.3	QuartLAnalyzer Class Reference	6
		3.3.1 Detailed Description	6
		3.3.2 Constructor & Destructor Documentation	6
		3.3.2.1 QuartLAnalyzer	6
		3.3.3 Member Function Documentation	6
		3.3.3.1 AddHitInEvent	6
	3.4	QuartLDetectorConstruction Class Reference	6
	3.5	QuartLEventAction Class Reference	7
	3.6	QuartLPrimaryGeneratorAction Class Reference	7
		3.6.1 Member Function Documentation	8
		3.6.1.1 SetInputROOTFile	8
	3.7	QuartLPrimaryGeneratorMessenger Class Reference	8
	3.8	QuartLRunAction Class Reference	8
	3.9	QuartLStackingAction Class Reference	9
	3 10	Quartl Stepping Verbose Class Reference	a

Chapter 1

Hierarchical Index

1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

G4SteppingVerbose	
QuartLSteppingVerbose	. 9
G4UImessenger	
QuartLPrimaryGeneratorMessenger	. 8
G4UserEventAction	
QuartLEventAction	. 7
G4UserRunAction G4UserRunAction	
QuartLRunAction	. 8
G4UserStackingAction	
QuartLStackingAction	. 9
G4VSensitiveDetector	
DetectorSD	. 5
G4VUserActionInitialization	
QuartLActionInitialization	. 5
G4VUserDetectorConstruction	
QuartLDetectorConstruction	. 6
G4VUserPrimaryGeneratorAction	
QuartLPrimaryGeneratorAction	. 7
Quartl Analyzer	6

2 **Hierarchical Index**

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

DetectorSD	5
QuartLActionInitialization	5
QuartLAnalyzer	6
QuartLDetectorConstruction	
QuartLEventAction	
QuartLPrimaryGeneratorAction	7
QuartLPrimaryGeneratorMessenger	
QuartLRunAction	
QuartLStackingAction	9
QuartI SteppingVerbose	ç

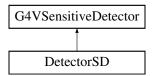
Class Index

Chapter 3

Class Documentation

3.1 DetectorSD Class Reference

Inheritance diagram for DetectorSD:



Public Member Functions

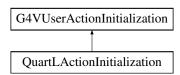
- DetectorSD (G4String)
- void Initialize (G4HCofThisEvent *)
- G4bool **ProcessHits** (G4Step *, G4TouchableHistory *)
- void **EndOfEvent** (G4HCofThisEvent *)

The documentation for this class was generated from the following file:

• include/DetectorSD.hh

3.2 QuartLActionInitialization Class Reference

Inheritance diagram for QuartLActionInitialization:



Public Member Functions

- · virtual void BuildForMaster () const
- · virtual void Build () const

6 Class Documentation

The documentation for this class was generated from the following file:

· include/QuartLActionInitialization.hh

3.3 QuartLAnalyzer Class Reference

#include <QuartLAnalyzer.hh>

Public Member Functions

QuartLAnalyzer (G4String filename="events.root")

Default class constructor to book the TTree and its different leaves to store the information.

void AddHitInEvent (G4Step *step)

Add a new photon hit on the PMT in the events' collection.

• void FillTree ()

Fills all branches in the TTree for one given event.

• void Store ()

Store the TTree onto an external ROOT file.

3.3.1 Detailed Description

Analysis class intended to store into a TTree the photons kinematic information for each event.

3.3.2 Constructor & Destructor Documentation

3.3.2.1 QuartLAnalyzer::QuartLAnalyzer (G4String filename = "events.root")

Default class constructor to book the TTree and its different leaves to store the information.

Parameters

in	filename	The file name to store the output tree.

3.3.3 Member Function Documentation

3.3.3.1 void QuartLAnalyzer::AddHitlnEvent (G4Step * step)

Add a new photon hit on the PMT in the events' collection.

Parameters

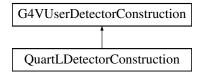
in	step	The Geant4 iterative step from which the photon kinematics is extracted.
----	------	--

The documentation for this class was generated from the following file:

· include/QuartLAnalyzer.hh

3.4 QuartLDetectorConstruction Class Reference

Inheritance diagram for QuartLDetectorConstruction:



Public Member Functions

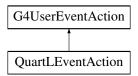
• G4VPhysicalVolume * Construct ()

The documentation for this class was generated from the following file:

• include/QuartLDetectorConstruction.hh

3.5 QuartLEventAction Class Reference

Inheritance diagram for QuartLEventAction:



Public Member Functions

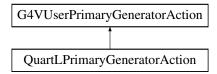
- void BeginOfEventAction (const G4Event *)
- void EndOfEventAction (const G4Event *)

The documentation for this class was generated from the following file:

· include/QuartLEventAction.hh

3.6 QuartLPrimaryGeneratorAction Class Reference

Inheritance diagram for QuartLPrimaryGeneratorAction:



Public Member Functions

- void GeneratePrimaries (G4Event *)
- void SetOptPhotonPolar ()
- void SetOptPhotonPolar (G4double)
- G4bool SetInputROOTFile (G4String)

8 Class Documentation

3.6.1 Member Function Documentation

3.6.1.1 G4bool QuartLPrimaryGeneratorAction::SetInputROOTFile (G4String)

Sets the input ROOT file from which all simulated events are to be fetched in private attributes.

Parameters

in	filename	The ROOT file to open to fetch events

Returns

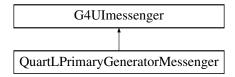
A boolean stating the success or failure of the TTree retrieval

The documentation for this class was generated from the following file:

· include/QuartLPrimaryGeneratorAction.hh

3.7 QuartLPrimaryGeneratorMessenger Class Reference

Inheritance diagram for QuartLPrimaryGeneratorMessenger:



Public Member Functions

- QuartLPrimaryGeneratorMessenger (QuartLPrimaryGeneratorAction *)
- void **SetNewValue** (G4UIcommand *, G4String)

The documentation for this class was generated from the following file:

• include/QuartLPrimaryGeneratorMessenger.hh

3.8 QuartLRunAction Class Reference

Inheritance diagram for QuartLRunAction:



Public Member Functions

- QuartLRunAction (QuartLAnalyzer *analyzer=0)
- void **BeginOfRunAction** (const G4Run *aRun)
- void **EndOfRunAction** (const G4Run *aRun)

QuartLAnalyzer * GetAnalyzer ()

Returns a pointer to the QuartLAnalyzer object used to collect all tracks' information in an external ROOT tree.

The documentation for this class was generated from the following file:

· include/QuartLRunAction.hh

3.9 QuartLStackingAction Class Reference

Inheritance diagram for QuartLStackingAction:



Public Member Functions

- G4ClassificationOfNewTrack ClassifyNewTrack (const G4Track *aTrack)

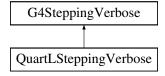
 Method to be run on every new track in the iterative tracking.
- · void NewStage ()
- void PrepareNewEvent ()

The documentation for this class was generated from the following file:

· include/QuartLStackingAction.hh

3.10 QuartLSteppingVerbose Class Reference

Inheritance diagram for QuartLSteppingVerbose:



Public Member Functions

- void StepInfo ()
- void TrackingStarted ()

The documentation for this class was generated from the following file:

• include/QuartLSteppingVerbose.hh